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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet	1	of	3
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**Complete if Known**

<b>Application Number</b>	10/000,122
<b>Filing Date</b>	October 31, 2001
<b>First Named Inventor</b>	Nataraj, B.
<b>Group Art Unit</b>	2185
<b>Examiner Name</b>	
<b>Attorney Docket Number</b>	N1-P109

Technology Center 2100

## U.S. PATENT DOCUMENTS

Examiner Initials <sup>2</sup>	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
RIE		3,257,646		Roth	06-21-1966	
RIE		3,353,159		Lee, III	11-14-1967	
RIE		4,244,033		Hattori	01-06-1981	
RIE		4,575,818		Almy et al.	03-11-1986	
RIE		4,622,653		McElroy	11-11-1986	
RIE		4,656,626		Yudichak et al.	04-07-1987	
RIE		4,670,858		Almy	06-02-1987	
RIE		4,845,668		Sano et al.	07-04-1989	
RIE		4,958,377		Takahashi	09-19-1990	
RIE		4,996,666		Duluk, Jr.	02-26-1991	
RIE		5,053,991		Burrows	10-01-1991	
RIE		5,072,422		Rachels	10-10-1991	
RIE		5,123,105		Wyland et al.	06-16-1992	
RIE		5,319,589		Yamagata et al.	06-07-1994	
RIE		5,383,146		Threewitt	01-17-1995	
RIE		5,394,353		Nusinov et al.	02-28-1995	
RIF		5,440,715		Wyland	08-08-1995	
RIE		5,483,480		Yoneda	01-09-1996	
RIF		5,485,418		Hiraki et al.	01-16-1996	
RIE		5,555,397		Sasama et al.	09-10-1996	

## FOREIGN PATENT DOCUMENTS

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Examiner  
Signature

R. Έμπορε

Date Considered	
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6-27-2004

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Sheet	2	of	3
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<b>Application Number</b>	10/000,122
<b>Filing Date</b>	October 31, 2001
<b>First Named Inventor</b>	Nataraj, B.
<b>Group Art Unit</b>	2485 2187
<b>Examiner Name</b>	R. Elmor
<b>Attorney Docket Number</b>	N1-P109

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RIE		5,642,322		Yoneda	06-24-1997	
RIE		5,649,149		Stormon et al.	07-15-1997	
RIE		5,706,224		Srinivasan et al.	01-06-1998	
RIE		5,787,458		Miwa	07-28-1998	
RIE		5,818,786		Yoneda	10-06-1998	
RIE		5,860,085		Stormon et al.	01-12-1999	
RIE		5,870,324		Helwig et al.	02-09-1999	
RIE		5,920,886		Feldmeir	07-06-1999	
RIE		5,930,790		Law et al.	07-27-1999	
RIE		5,943,252		Schultz et al.	08-24-1999	
RIE		5,946,704		Yoneda et al.	08-31-1999	
RIE		5,999,435		Henderson et al.	12-07-1999	
RIE		6,081,441		Ikeda	06-27-2000	
RIE		6,081,442		Igarashi et al.	06-27-2000	
RIE		6,147,890		Kawana et al.	11-14-2000	
RIE		6,252,789		Pereira et al.	06-26-2001	
RIE		6,253,280		Voelkel	06-26-2001	

## FOREIGN PATENT DOCUMENTS

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Examiner Signature	R. ELMORE
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Date Considered	6-27-2004
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Sheet 3 of 3

### Complete if Known

Application Number 10/000,122  
Filing Date October 31, 2001  
First Named Inventor Nataraj, B.  
Group Art Unit 2185 2187  
Examiner Name R. ELMORE  
Attorney Docket Number N1-P109

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### OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

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RIE		KEN SCHULTZ and ANDREW SOROWKA, "High-Performance CAMs for 10 GB/S and Beyond," Gibabit Ethernet Conference (GEC 2000), March 27, 2000, pp. 147-154	
RIE		S. DEERING and R. HINDEN, "Internet Protocol, Version 6 (IPv6) Specification," Network Working Group, Request for Comments: 2460, December 1998, pp.1-39	
RIE		"LNI7020 Search Engine, Version 2.0," Lara Networks, Inc., pp. 1-129 downloaded April 5, 2001 from URL <a href="http://www.st.com">http://www.st.com</a> ,	
RIE		"LNI7040 Search Engine, Version 1.1," Lara Networks, Inc., pp. 1-142 downloaded March 27, 2001 from URL <a href="http://www.laranetworks.com">http://www.laranetworks.com</a>	

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R. ELMORE

Date  
Considered

6-27-2004

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<b>Application Number</b>	10/000,122
<b>Filing Date</b>	October 31, 2001
<b>First Named Inventor</b>	Nataraj, B.
Group Art Unit	<del>2485</del> 2187
Examiner Name	R. Elmore
Attorney Docket Number	N1-P109

Sheet	1	of	2
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Examiner Signature	R. Emore	Date Considered	6-27-2004
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		<b>Filing Date</b>	October 31, 2001
		<b>First Named Inventor</b>	Nataraj, B.
		<b>Group Art Unit</b>	2485 2157
		<b>Examiner Name</b>	R. ELMORE
		<b>Attorney Docket Number</b>	N1-P109
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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials <sup>1</sup>	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
R/E		PANKAJ GUPTA, STEVEN LIN and NICK MCKEOWN, "Routing Lookups in Hardware at Memory Access Speeds," Proc. Infocom, San Francisco, April 1998, pp.1-8	
R/E		NEN-FU HUANG, SHI-MING ZHAO, JEN-YI PAN and CHI-AN SU, "A Fast IP Routing Lookup Scheme for Gigabit Switching Routers," IEEE, 1999, pp.1429-1436	
R/E		NEN-FU HUANG and SHI-MING ZHAO, "A Novel IP-Routing Lookup Scheme and Hardware Architecture for Multigigabit Switching Routers," IEEE Journal on Selected Areas In Comm., Vol. 17, No. 6, June 1999, pp. 1093-1104	
R/E		TSUNEMASA HAYASHI and TOSHIKI MIYAZAKI, "High-Speed Table Lookup Engine for IPv6 Longest Prefix Match," IEEE Global Telecommunications Conference, 1999, pp. 1576-1581	
R/E		MASAYOSHI KOBAYASHI, TUTOMU MURASE and ATSUSHI KURIYAMA, "A Longest Prefix Match Search Engine for Multi-Gigabit IP Processing," IEEE, 2000, pp. 1360-1364	
R/E		MASAYOSHI KOBAYASHI and TUTOMU MURASE, "A Processor Based High-Speed Longest Prefix Match Search Engine," IEEE, 2001, pp. 233-239	
R/E		MARCEL WALDVOGEL, GEORGE VARGHESE, JON TURNER and BERNHARD PLATTNER, "Scalable High-Speed Prefix Matching," ACM Transactions on Computer Systems, Vol. 19, No. 4, November 2001, pp. 440-482	
R/E		V. SRINIVASAN and GEORGE VARGHESE, "Fast Address Lookups Using Controlled Prefix Expansion," ACM Transactions on Computer Systems, Vol. 17, No. 1, February 1999, pp. 1-40	
R/E		MARCEL WALDVOGEL, GEORGE VARGHESE, JON TURNER and BERNHARD PLATTNER, "Scalable High Speed IP Routing Lookups," ACM SIGCOMM, 1997, pp. 25-35	
R/E		MASAYOSHI KOBAYASHI, TUTOMU MURASE, NAOYUKI OGURA and ATSUSHI KURIYAMA, "A 50 Mpps Longest Prefix Match Search Engine LSI for Multi-Gigabit IP Forwarding," Technical Report of IEICE, IN08-119, November 1998, pp. 7-12	X

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